

Appl. No.: 10/033,715  
Amdt. Dated: 12/14/2004  
Off. Act. Dated: 07/14/2004

### **REMARKS/ARGUMENTS**

Reconsideration of this application is respectfully requested in view of the discussion presented herein.

1. **Objection to Claim 16.**

The Examiner objected to Claim 16 for the stated reason that the word "claim" in line 2 contained a typographical error. However, the Applicant is unable to find any typographical error in that word.

The Examiner also objected to Claim 16 for the reason that it depends from canceled Claim 13. In response, the Applicant has amended Claim 16 to remove the dependency from Claim 13.

2. **Rejection of Claims 1 and 3-5 under 35 U.S.C. §112, first paragraph.**

The Examiner rejected Claim 1, as well as dependent Claims 3-5, under 35 U.S.C. §112, first paragraph, for failing to comply with the written description requirement for the stated reason that there is no support in the specification for the limitation of "an amorphous insulating layer" in Claim 1.

In response, the Applicant respectfully calls to the Examiner's attention that the Specification at page 15, lines 4-5 states "The insulator 14 can be any barrier, an insulator, SiO<sub>2</sub>, or other common insulators". The Examiner is respectfully reminded that SiO<sub>2</sub> is an amorphous material essentially all deposited and thermally grown oxides in semiconductor processing are amorphous. Note also that Claim 3 recites SiO<sub>2</sub> as the insulating layer and Claim 5 recites oxidized polysilicon for the insulating and light emitting layers in combination; both materials are amorphous.

Therefore, the Applicant respectfully traverses the rejection since there is no requirement of describing that which is inherent or known in the art, or which one of ordinary skill would immediately recognize as being a fact. Accordingly, the rejection under 35 U.S.C. §112, first paragraph should be withdrawn.

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3. Rejection of Claims under 35 U.S.C. §103.

Claims 1, 3-12, 16, 17, and 19-28 were rejected under 35 U.S.C. §103 as being unpatentable over Shealy et al. (U.S. No. 5,949,182) in view of Cathey et al. (U.S. No. 5,391,259) and in further view of what the Examiner states is admitted prior art.

In support of the rejection, the Examiner states that Shealy teaches a multi-layer light emitting device comprising an electron emitting layer and a direct bandgap light emitting layer over the electron emitting layer, but only teaches using silicon as the electron-emitting layer and not polysilicon. The Examiner goes on to state that Cathey teaches that polysilicon substrate can be used to form an electron-emitting layer in the process of fabricating atomically sharp field emission tips and that it would be obvious to incorporate Cathey's polysilicon substrate in Shealy's structure since it is easier to process polysilicon than single crystal silicon.

In response, the Applicant notes that both Shealy structure and Cathey's structure are directed to emitter "tips" which are tapered structures emanating from a substrate. Such "sharp tips" are required for Shealy's structure to function and Cathey merely teaches a method of fabrication of such tips.

In contrast, as shown in Applicant's FIG. 1 and FIG. 2, the Applicant does not employ sharpened tips for the emitters. The mechanism employed by the Applicant is to produce field emission into an insulator rather than producing artificial "sharp" tips by various means of etching as is described in Shealy and Cathey. In the Applicant's invention, oxidation of the polysilicon to form an insulating layer produces dendrites or similar long skinny crystalline formations in the polysilicon that cause field emission. While Cathey teaches the use of polysilicon and the Examiner states that the admitted prior art teaches that oxidized polysilicon promotes field emission, the Applicant was the first to recognize that this can be done without requiring artificially formed sharp emitter tips in the structure recited in the Applicant's claims. The Applicant has amended each of the pending independent claims to recite this distinction. Therefore, the Applicant respectfully submits that the Applicant's claims, as amended, are patentable over the

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cited art because the prior art does not suggest, teach or provide motivation or incentive for the invention recited in the Applicant's claims.

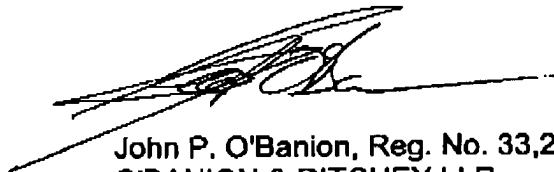
4. Conclusion.

In view of the above, each of the presently pending claims in this application is believed to be in immediate condition for allowance. Accordingly, the Examiner is respectfully requested to withdraw the outstanding rejection of the claims and to pass this application to issue.

The Applicant also respectfully requests a telephone interview with the Examiner in the event that there are questions regarding this response, or if the next action on the merits is not an allowance of all pending claims.

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Respectfully submitted,



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